Contents

Number 1, February 1978

Physical Sciences Section

Preparation of some novel pyridone derivatives
Alan R. Katritzky, A. Sultan Afridi and Christopher A. Ramsden 1

On the propagating species in tetrahydrofuran-fluorosulphonic acid polymerization process
M.U. Mahmud 5

Investigation of oxidation processes at lead dioxide anode
Mohammad Amjad 9

Biological Sciences Section

Initiation of procambial strands in the primordia of stamens and carpel of *Triticum aestivum* L.
Parveen Aziz 12

Short Communications

An abnormal seedless papaya fruit resulting from virous infection
S. Mahdihassan 17

Icerya aegyptiaca as infecting a fig tree in Karachi
S. Mahdihassan 18

The mango tree in Karachi as extensively infected by a scale-insect
S. Mahdihassan 19

Technology Section

The mineralogy and geochemistry of some clays from Nagarparkar
S.R. Hassan Baqri 22

The mineralogy and chemistry of refractory clay deposits from Lakhra and Jhampeer in Sind, Pakistan
S.R. Hassan Baqri 25

Sulphur compounds in light Arabian and Kuwait crude oils
Mohammad Farhat Ali 29

Chemical and organoleptic characteristics of trawler caught shrimps from the Karachi-Makran coast. Part I. Changes during ice storage and their possible use as quality indices
Bilquis Farooqui, R.B. Qadri, Riaz Fatima, Razia Rafique and A.H. Khan 33

Chromatography of phosphate esters. Part II. Separation by thin layer chromatography
M. Younas and M. Akhtar 37

Comparison of four extraction methods for the estimation of available zinc for wheat
F.M. Chaudhry, S.M. Alam, M. A. Kausar and A. Rashid 39

Lead dioxide electrode for anodic oxidations
Mohammad Amjad 43

Contents

Short Communication

Seeds of *Peganum harmala*. A possible new source of edible oil
Salimuzzaman Siddiqui and (Miss) Nighat Afza 46

Number 2, April 1978

Physical Sciences Section

Thermal studies on aluminium (III)-2-substituted-8-hydroxyquinolates
M.A. Khwaja and S.M. Ali 47

The reactions of organometallic compounds involving silicon. Reactions of triphenyl-, diphenylmethyl-, , and phenyldimethylsilyl potassium with fluorene in tetrahydrofuran
Muhammad Abdul Hamid 52

Mass spectral fragmentation of t-butyl glycidic esters
S.U. Sheikh 56

Condensation of ethyl α-acetylcinnamates with thioureas
M.A. Elkasaby 58

Short Communications

Oxidation of 2-(4-hydroxyphenyl)-3-methylindole with hydrogen peroxide
B.Robinson and M. Uppal Zubair 62

Mass spectral studies on dimorpholinoethane
M.A. Khwaja, Imdad-ullah, M. Sakhawat Hussain and S. Marghoob Ali 62

Biological Sciences Section

Individual rearing and single pair oviposition results of *Pectinophora gossypiella* (Saunders) developed on bean containing diet (Lepidoptera: Gelichidea)
M. Rafi Shaikh, Khalique Ahmed and Mrs. Feeroza Khalique 65

Technology Section

Studies on the different parts of the fleece of Hashtnagri sheep. Par III. Nonuniformity in dyeing of root, middle and tip portion of wool fibres
Mumtaz Ahmad Khan, Amir Mohammad Khan and Asadullah Jan 67

Studies on the essential oils of the Pakistani species of the family Umbelliferae. Part XVII. *Heracleum candicans* (Eng. Cowparsnip. Var. Morchar) seed oil
Muhammad Ashraf and Muhammad Khurshid Bhatty 70

Studies on the essential oils of the Pakistani species of the family Umbelliferae. Part XVIII. *Platyaenia lasiocarpa* sp. Thomsonii seed oil
Muhammad Ashraf and Muhammad Khurshid Bhatty 73

Studies on the essential oils of the Pakistani species of the family Umbelliferae. Part XIX. *Ferula ovina* Boiss (Kamyan) oils distilled from the mature and the immature seeds and the roots of the plant
Amna Karim and Muhammad Khurshid Bhatty 75

Contents

Short Communications

Vaporisation and residue of Lindane on chickpeas *(Cicre arientinum)* stored at about 32°C in laboratory
Hafiz Ahmed and Rehana Ausaf 78

Changes in DTPA-extractable Zn, Cu, Fe and Mn in two alkaline calcareous soils followed by sucrose application
F. Hussain and A. Rashid 80

Review

Recovery of metallic copper from acid leach solution. Part I
Khadim Hussain 83

Book Notices 90

Numbers 3–4, June–August 1978

Physical Sciences Section

Exact enumerations and Monte Carlo sampling of self-avoiding random walks
Abdullah Sadiq 91

Antiviral agents. Part I. Indoles as analogues of 2-(α-hydroxybenzyl)- benzimidazole
T.S.L. Beswick, Col. E. Gumrukcu, B. Robinson and Muhammad Uppal Zubair 96

A simpler and high-yield synthesis of 6-nitrovanillin
Yusuf Ahmad, Shamim Ahmad Shamsi and M. Ikram Qureshi 99

Synthesis of heterobicylic compounds. Part V. Formation of 4,5-dioxopyridino (3,4-e) (1,3)-oxazines
Aslam Butt, Rashid Kemal and Rasheeda Parveen 101

Quantitative dimensional characterization of polymer single crystals from their light scattering in streaming systems
Noor Ahmed 106

The alkaline hydrolysis of methyl-substituted aryl phosphates
M. Younus and Sabiha S. Bokhari 111

Electrolytic studies with 2-hydroxycyclohexane acetic acid
Naser-ud-din 115

Short Communications

A convenient method for synthesis of 3,4,5-trichloropyridazine
Naser-ud-din 119

Synthesis of 2-hydroxy-2-phenyl-1,2,3,4,6,7-hexahydro-11, b *H*-benzo (a) quinolizine and 2-phenyl-1,2,3,4,5,7-tetrahydro-11, b *H*-benzo (a) quinolizines
M. Salim 120

Chemical investigation of *Berberis zebiliana*
M. Ikram and Fehmida Khan 121

Biological Sciences Section

Studies on *Nectria galligena* Bres. Part I. The effect of temperature, light and media on growth and sporulation
A.J. Al-Zarari 122

Studies on *Nectria galligena* Bres. Part II. Bacterial association
A.J. Al-Zarari 126

Some aspects of the morphology of *Catacanthus incarnatus* (Drury) (Pentatomidae: Pentatominae) with phylogenetic considerations
Imtiaz Ahmad and Mohammad Afzal 129

Technology Section

New possible indigenous source of fat
M. Uppal Zubair and Zahida Zaheer 136

Solubilities of R_2O_3 oxides in periclase and monticellite systems
M. Ibrahim 138

Short Communications

Zinc-manganese interrelations in calcareous soils
F. Hussain and A. Rashid 143

Zinc-copper interrelations in calcareous soils
A. Rashid and F. Hussain 145

Special Paper

Appropriate technology for preservation of food in usealed covered containers
S.R.H. Rizvi 147

Book Notices 150

Numbers 5–6, October–December 1978

Physical Sciences Section

Study of the effects of dielectric constants on the specific rate constant of bromide–bromate reaction
M. Ghaziuddin Ahmed, Qadeer Ahmed Khan and Fahim Uddin 155

Studies in the steroidal constituents of the seeds of *Abrus precatorius* Linn. (Scarlet Variety)
Salimuzzaman Siddiqui, (Miss) Bina S. Siddiqui and Zafar Naim 158

Studies of a carbohydrate-containing polymer from *Cordia myxa*
M.K. Bhatty, D.H. Shah, M.A. Saeed and Nasir-ud-Din 162

Low frequency dielectric properties of kail wood
S.M.A. Tirmizi, M. Ashraf Chaudhry and S.M.A. Shah 164

Low frequency dielectric properties of marble
S.M.A. Tirmizi and M. Ashraf Chaudhry 168

Contents

Short Communications

Studies on 3-carbethoxy-5, 6-benzocoumarin. Part I. Action of Grignard reagents, ureas, thioureas and thiophenols
M.A. Elkasaby and N.A. Noureldin 171

Michael condensation of 3-carbethoxy-5, 6-benzocoumarin with ethyl acetoacetate, ethyl benzoylacetate, ethylcyanoacetate and acetylacetone
M.A. Elkasaby and N.A. Noureldin 176

Biological Sciences Section

A new species and a new record of Eysarcorini (Heteroptera: Pentatomidae) from Bangladesh and Pakistan
Imtiaz Ahmad and Nazeer Ahmed Rana 181

A new genus and two new species of Carpocorini (Heteroptera: Pentatomidae) from Pakistan
Imtiaz Ahmad and Syed Kamaluddin 185

Studies on the rationale of African traditional medicine. Part. II. Preliminary screening of medicinal plants for antigonoccocal activity
A.N. Sawheny, M.R. Khan, G. Ndaalio, M.H.H. Nkunya and H. Wevers 189

Studies on the rationle of African traditional medicine. Part III. Preliminary screening of medicinal plants for antifungal activity
A.N. Sawheny, M.R. Khan, G. Ndaalio, M.H.H. Nkunya and H. Wevers 193

Antibiotic action of constituents of root bark of *Euclea natalensis* A.DC.
M.R. Khan, S.L. Mutasa, G. Ndaalio, H. Wevers and A.N. Sawheny 197

Technology Section

Effect of method and time of application on P uptake in cotton from P^{32}-labelled superphosphate
A. Hamid and G. Sarwar 200

Treatment of copper leach solutions by ion exchange resins
K. Hussain and M. Rumeau 204

Preparation and nutritional evaluation of a domestic level vegetable protein mixture and some common meals based on it
Miss Jameela Jan and S. Maqsood Ali 211

Comparison of four extraction methods for the estimation of available Cu for flooded rice and wheat
F.M. Chaudhry, M.A. Kausar and M. Sharif 216

Development of bone-china from indigenous raw materials
M. Pervaiz Iqbal and M. Ibrahim 221

Short Communication

Asimple precaution to prevent breakage of centrifuge tubes during operation
Saiyed Asad M. Ali 224

Book Notices 226